Department of Veterans Affairs
Decentralized Hospital Computer Program

DHCP
HEALTH LEVEL SEVEN
(HL7)
RELEASE NOTES

Version 1.6

October 1995

IRM Field Office
Albany NY

Table of Contents

Overview

With the release of V. 1.6, DHCP HL7 supports several methods for interfacing to the HL7 protocol. The method established by V. 1.5 is still supported (for backwards compatibility), and a new method is introduced, as well as new routines, file structures, templates, menus, and options. There are some significant differences between the V. 1.5 and V. 1.6 interface methods, as shown in the following table:

V. 1.5 Interface Method	V. 1.6 Interface Method
One sender and one receiver per message.	One sender, one or more receivers.
Sender and receiver must be on different systems.	Sender and receiver can be on the same or different systems.
Messages must go through a communications protocol.	Messages sent to applications on the same system do not have to go through a communications protocol.
All messages are processed in the background.	Messages are processed in either the foreground or background, based on the priority assigned by sending/receiving applications.
No support for event points.	Event points are supported.

V. 1.6 Related Manuals

For applications using the V. 1.6 interface method, please refer to the following manuals:

- DHCP HL7 V. 1.6 Developer Manual
- DHCP HL7 V. 1.6 Installation Guide
- DHCP HL7 V. 1.6 Package Security Guide
- DHCP HL7 V. 1.6 Technical Manual
- DHCP HL7 V. 1.6 User Manual

V. 1.5 Related Manuals

For applications using the V. 1.5 interface method, you might also want to refer to the following manuals:

- DHCP HL7 V. 1.5 Developer Manual
- DHCP HL7 V. 1.5 Installation Guide
- DHCP HL7 V. 1.5 Package Security Guide
- DHCP HL7 V. 1.5 Release Notes
- DHCP HL7 V. 1.5 Technical Manual
- DHCP HL7 V. 1.5 User Manual

Routines

V. 1.5 routines have not been modified significantly in V. 1.6; however, all new routines introduced in V. 1.6 have been namespaced according to the module of the DHCP HL7 package to which they belong.

New Modules

HLCS
Communications Server
The Communications Server module receives all incoming messages and transmits all outgoing messages. It includes options for IRM staff to monitor incoming and outgoing messages and to start/stop lower level protocols.

HLDTIW
Interface Workbench
The Interface Workbench Module defines the application(s) that will send/receive HL7 messages. It uses List Manager screens which contain various tools and actions with which you create, edit, and delete applications and their associated logical links, server protocols, and subscriber (client) protocols.

HLFNC
Functions
Routines in this namespace provide callable subroutines or extrinsic functions that can be used by the DHCP HL7 package itself or by other DHCP applications.

HLMA
Message Administration
The Message Administration module is the single point of control for all messages. All messages must pass through the Message Administration module, where they are assigned a unique message ID in the HL7 MESSAGE ADMINISTRATION file (#773). The Message Administration module also creates one or more entries in the HL7 MESSAGE TEXT file (#772) for each message.

HLTP
Transaction Processor
The Transaction Processor module performs all actions relating to generating outgoing messages and processing incoming messages. It performs such functions as validating message headers, filing message text, invoking application processing routines, etc.

New Modules, cont.

HLUTIL
Utilities
Routines in this namespace provide callable subroutines and extrinsic functions that are reserved for use by the DHCP HL7 package.

New Routines

HLCS	HLCS1	HLCSDL	HLCSDL1	HLCSDL2	HLCSDR	HLCSDR1	HLCSDR2
HLCSFMN	HLCSFMN0	HLCSFMN1	HLCSHDR	HLCSIN	HLCSLNCH	HLCSMM	HLCSMM1
HLCSMON	HLCSMON1	HLCSORA1	HLCSORA2	HLCSORAT	HLCSOUT	HLCSQUE	HLCSQUE1
HLCSQUED	HLCSRE1	HLCSREP	HLCSREQ	HLCSRES	HLCSRQ	HLCSRV	HLCSTERM
HLCSUTL	HLCSUTL1	HLCSUTL2	HLDTIW01	HLDTIW02	HLDTIW03	HLDTIW04	HLDTIW05
HLDTIW2A	HLDTIW2B	HLDTIW2C	HLDTIWP0	HLDTIWP1	HLDTIWP2	HLDTIWP3	HLDTIWP4
HLDTIWP5	HLDTIWP6	HLDTIWU0	HLDTIWU1	HLDTIWU2	HLDTIWU3	HLDTIWU4	HLDTIWU5
HLFNC2	HLFNC3	HLINI00A	HLINI00B	HLINI00C	HLINI00D	HLINI00E	HLINI00F
HLINI00G	HLINI00H	HLINI00I	HLINI00J	HLINI00K	HLINI00L	HLINI00M	HLINI00N
HLINI00O	HLINI00P	HLINI00Q	HLINI00R	HLINI00S	HLINI00T	HLINI00U	HLINI00V
HLINI00W	HLINI00X	HLINI00Y	HLINI00Z	HLINI01A	HLINI01B	HLINI01C	HLINI01D
HLINI01E	HLINI01F	HLINI01G	HLINI01H	HLINI01I	HLINI01J	HLINI01K	HLINI01L
HLINI01M	HLINI01N	HLINI01O	HLINI01P	HLINI01Q	HLINI01R	HLINI01S	HLINI01T
HLINI01U	HLINI01V	HLINI01W	HLINI01X	HLINI01Y	HLINI01Z	HLINI027	HLINI028
HLINI029	HLINI02A	HLINI02B	HLINI02C	HLINI02D	HLINI02E	HLINI02F	HLINI02G
HLINI02H	HLINI02I	HLINI02J	HLINI02K	HLINI02L	HLINI02M	HLINI02N	HLINI02O
HLINI02P	HLINI02Q	HLINI02R	HLINI02S	HLINI02T	HLINI02U	HLINI02V	HLINI02W
HLINI02X	HLINI02Y	HLINI02Z	HLINI030	HLINI031	HLINIS	HLINIT5	HLLM
HLLM1	HLMA	HLMA0	HLMA1	HLMA2	HLNTEG0	HLONI001	HLONI002
HLONI003	HLONI004	HLONI005	HLONI006	HLONI007	HLONI008	HLONI009	HLONI010
HLONI011	HLONIT	HLONIT1	HLONIT2	HLONIT3	HLOPT1	HLPOST	HLPOST16
HLPOSTQ	HLPRE16	HLTF0	HLTF1	HLTP	HLTP0	HLTP01	HLTP1
HLTP2	HLTPCK1	HLTPCK1A	HLUOPT	HLUOPT1	HLUTIL1	HLUTIL2	HLUTIL3

Data Dictionaries

All files in DHCP HL7 V. 1.6 support V. 2.2 of the HL7 protocol.

New Files

101
PROTOCOL
A number of fields have been added to the PROTOCOL file (#101) to support messaging protocols for event drivers and event subscribers. The following two values were added to the TYPE field (#4) of the PROTOCOL file (#101):

- E for Event Driver
- S for Subscriber

771.6
HL7 MESSAGE STATUS
This file is a table of statuses that are assigned to entries in the HL7 MESSAGE TEXT file (#772).

771.7
HL7 ERROR MESSAGE
This file is a table of error codes and messages that are assigned to entries in the HL7 MESSAGE TEXT file (#772).

771.8
HL7 STANDARD
This file is a table of standard protocols supported by the DHCP HL7 package.

773
HL7 MESSAGE ADMINISTRATION
This file is used to create and maintain unique message IDs. It also contains the date/time when each ID was created.

New Files, cont.

*****779.001
HL7 EVENT TYPE CODE
This file is a table of HL7 event codes.

*****779.002
HL7 ACKNOWLEDGEMENT CODE
This is a file of codes that are used by the system when processing acknowledgment messages to determine whether the message was successfully received and processed.

*****779.003
HL7 ACCEPT/APPLICATION ACK CONDITION
This is a file of codes that are used by the system when processing acknowledgment messages to determine how to respond to a message.

*****779.004
COUNTRY CODE
This is a table of codes used by the system when building message header segments.

869.1
HL LOWER LEVEL PROTOCOL TYPE
This file contains the valid Lower Layer Protocols (LLPs) available for use with the HL7 package.

869.2
HL LOWER LEVEL PROTOCOL PARAMETER
This file contains the LLP parameters used by the HL7 package. Each protocol uses a separate node to hold the parameters associated with the LLP used by the logical link. There should be an entry in this file for each logical link defined in File #870. The currently defined nodes are:

- 100 - MailMan
- 200 - HLLP
- 300 - X3.28

*****Data tables to support each standard (#779.001 to #779.999). Files #779.005 through #779.999 are reserved for distribution with future releases. *These files should not be modified locally, because each subsequent version will overwrite prior versions to support the HL7 Standard.*

New Files, cont.

869.3
HL COMMUNICATION SERVER PARAMETERS
This file contains the parameters used by the HL7 Communications Server.

870
HL LOGICAL LINK
This file contains information about how to transmit information between applications that are on different computer systems. It also temporarily stores messages prior to their transmission.

Modified Files

771
New name in V. 1.6: HL7 APPLICATION PARAMETER
(Former name in V. 1.5: HL7 DHCP APPLICATION PARAMETER)
In V. 1.6, this file includes information about *all* applications (DHCP and non-DHCP) that exchange messages.

771.1
HL7 FIELD
This file is used for documentation purposes only in V. 1.6, but entries have been added for all HL7 protocol fields, and some minor structural changes have been made.

771.2
HL7 MESSAGE TYPE
Entries have been added for all HL7 message types and a new VERSION field (#3) has been created.

771.3
New name in V. 1.6: HL7 SEGMENT TYPE
(Former name in V. 1.5: HL7 SEGMENT NAME)
Entries have been added for all HL7 segment types and a new VERSION field (#3) has been created.

771.4
HL7 DATA TYPE
Entries have been added for new HL7 data types and a new VERSION field (#3) has been created.

Modified Files, cont.

771.5
New name in V. 1.6: HL7 VERSION
(Former name in V. 1.5: HL7 VERSION SUPPORTED)
A new STANDARD field (#2) has been added to link each version number with a standard.

772
New name in V. 1.6: HL7 MESSAGE TEXT
(Former name in V. 1.5: HL7 TRANSMISSION)
- Several fields have been added or changed to link messages with new files, such as HL7 MESSAGE STATUS (#771.6), HL7 ERROR MESSAGE (#771.7), and HL LOGICAL LINK (#870).
- The labels of several fields have been changed to make them more pertinent.
- Field # .01 has been changed from a date/time to a pointer to the HL7 MESSAGE ADMINISTRATION file (#773).

Fields Added to the Top Level of the PROTOCOL file (#101)

770.1
SERVER APPLICATION
Pointer to the HL7 APPLICATION PARAMETER file (#771).

770.2
CLIENT (SUBSCRIBER)
Pointer to the HL7 APPLICATION PARAMETER file (#771).

770.3
MESSAGE TYPE
Pointer to the HL7 MESSAGE TYPE file (#771.2).

770.4
EVENT TYPE
Pointer to the HL7 EVENT TYPE CODE file (#779.001).

770.5
PRIORITY
Set of codes: I for Immediate; D for Deferred.

770.6
PROCESSING ID
Set of codes: D for Debug; T for Training; P for Production.

Fields Added to the Top Level of the PROTOCOL file (#101), cont.

770.7
LOGICAL LINK
Pointer to the HL LOGICAL LINK file (#870).

770.8
ACCEPT ACK CODE
Pointer to the HL7 ACCEPT/APPLICATION ACK CONDITION file (#779.003).

770.9
APPLICATION ACK TYPE
Pointer to the HL7 ACCEPT/APPLICATION ACK CONDITION file (#779.003).

770.95
VERSION ID
Pointer to the HL7 VERSION file (#771.5).

771
GENERATE/PROCESS ROUTINE
M code which calls the message generation or message processing routine for an initial message.

772
GENERATE/PROCESS ACK ROUTINE
M code which calls the message generation/processing routine for a query response or regular acknowledgment.

773.1
SENDING FACILITY REQUIRED?
Set of codes: 1 for Yes; 0 for No.

773.2
RECEIVING FACILITY REQUIRED?
Set of codes: 1 for Yes; 0 for No.

773.3
SECURITY REQUIRED?
Set of codes: 1 for Yes; 0 for No.

773.4
DATE/TIME OF MESSAGE REQUIRED?
Set of codes: 1 for Yes; 0 for No.

New Input Templates

HL 1.6 APPLICATION PARAM EDIT (File #771)
HL MESSAGING PROTOCOL EDIT (File #101)

Options

New Options

The following new options support V. 1.6 only:

HL CLEAR COMMUNICATIONS ERROR
Clears the LLP error for a user-specified logical link.

HL CLEAR QUEUE
Reinitializes a queue to zero entries.

HL COMMUNICATIONS SERVER
Menu containing the Communications Server options.

HL COPY QUEUE ENTRY
Copies a message into a queue multiple times. (This option can be used to "test" interfaces by allowing a message to be retransmitted multiple times.)

HL CRE/ED QUEUE TEST ENTRY
Creates a "test" message in a queue and sends it to a non-DHCP system or a DHCP application. (This allows testing of an interface with "test" messages that have been entered into a word-processing field.)

HL CUSTOM REPORT
Prints customized reports about entries in the HL LOGICAL LINK file (#870).

HL EDIT COMM SERVER PARAMETERS
Edits the HL COMMUNICATION SERVER PARAMETER file (#869.3).

HL FILER MONITOR
Used to monitor incoming and outgoing filers.

HL INTERFACE WORKBENCH
Used to define the application (e.g., RADIOLOGY) that will send/receive HL7 messages through the use of various List Manager screens and tools.

HL MANAGE FILERS
Menu containing the options to manage the incoming and outgoing filers.

HL MENU 1.6
Main menu containing all V. 1.6 options.

New Options, cont.

HL MESSAGE MONITOR
Monitor that displays real-time information about serial links.

HL MESSAGE REQUEUER
Activates the HL7 Message Requeuer, which allows users to requeue for transmission selected HL7 messages.

HL QUEUE MANAGEMENT
Menu containing the options to manage the logical link queues and to setup test entries in those queues.

HL SHOW COMMUNICATIONS ERROR
Displays the most recent LLP error for a user-specified logical link.

HL START
Starts a user-specified LLP.

HL START DEFAULT FILERS
Starts the user-specified default number of incoming filers.

HL START ONE INCOMING FILER
Starts the first sequential incoming filer that is not running.

HL START ONE OUTGOING FILER
Starts the first sequential outgoing filer that is not running.

HL STOP
Stops a user-specified LLP.

HL STOP ALL INCOMING FILERS
Stops all incoming filers that are currently running.

HL STOP ALL OUTGOING FILERS
Stops all outgoing filers that are currently running.

HL STOP ONE INCOMING FILER
The first sequential filer in the list of incoming gets flagged to stop.

HL STOP ONE OUTGOING FILER
The first sequential filer in the list of outgoing gets flagged to stop.

New Options, cont.

The following new option supports V. 1.5 only:

HL MENU 1.5
Main menu containing all V. 1.5 options.

Menu Structure

With this release of DHCP HL7, the menu structure has been modified to distinguish options that support V. 1.5, V. 1.6, or both versions.

```
HL7 Main Menu
   1  V1.5 OPTIONS ...
      1  Non-DHCP Application Parameter Enter/Edit
      2  Initiate Background Task
      3  Start/Stop Log of HL7 Transmissions
   2  V1.6 OPTIONS ...
      1  Communications Server ...
         1  Edit Communication Server parameters
         2  Manage incoming & outgoing filers ...
            1  Start default number of incoming & outgoing filers
            2  Start an incoming filer
            3  Start an outgoing filer
            4  Stop all incoming filers
            5  Stop all outgoing filers
            6  Stop an incoming filer
            7  Stop an outgoing filer
         3  Monitor incoming & outgoing filers
         4  Start LLP
         5  Stop LLP
         6  Systems Link Monitor
         7  Logical Link Queue Management ...
            1  Show Communications Error
            2  Clear Communications Error
            3  Create/Edit a Queue Test Entry
            4  Copy a Queue Entry
            5  Clear a Queue of all Entries
         8  Report
      2  Interface Workbench
      3  Message Requeuer
   3  Activate/Inactivate Application
   4  Print/Display Menu ...
      1  Application Parameters Print/Display
      2  Non-DHCP Application Parameters Print/Display
      3  Awaiting/Pending Transmissions Print/Display
      4  Failed HL7 Transmissions Print/Display
      5  Version Print/Display
      6  Message Type Print/Display
      7  Segment Name Print/Display
      8  Data Type Print/Display
      9  Fields Print/Display
   5  Purge Message Text File Entries
```